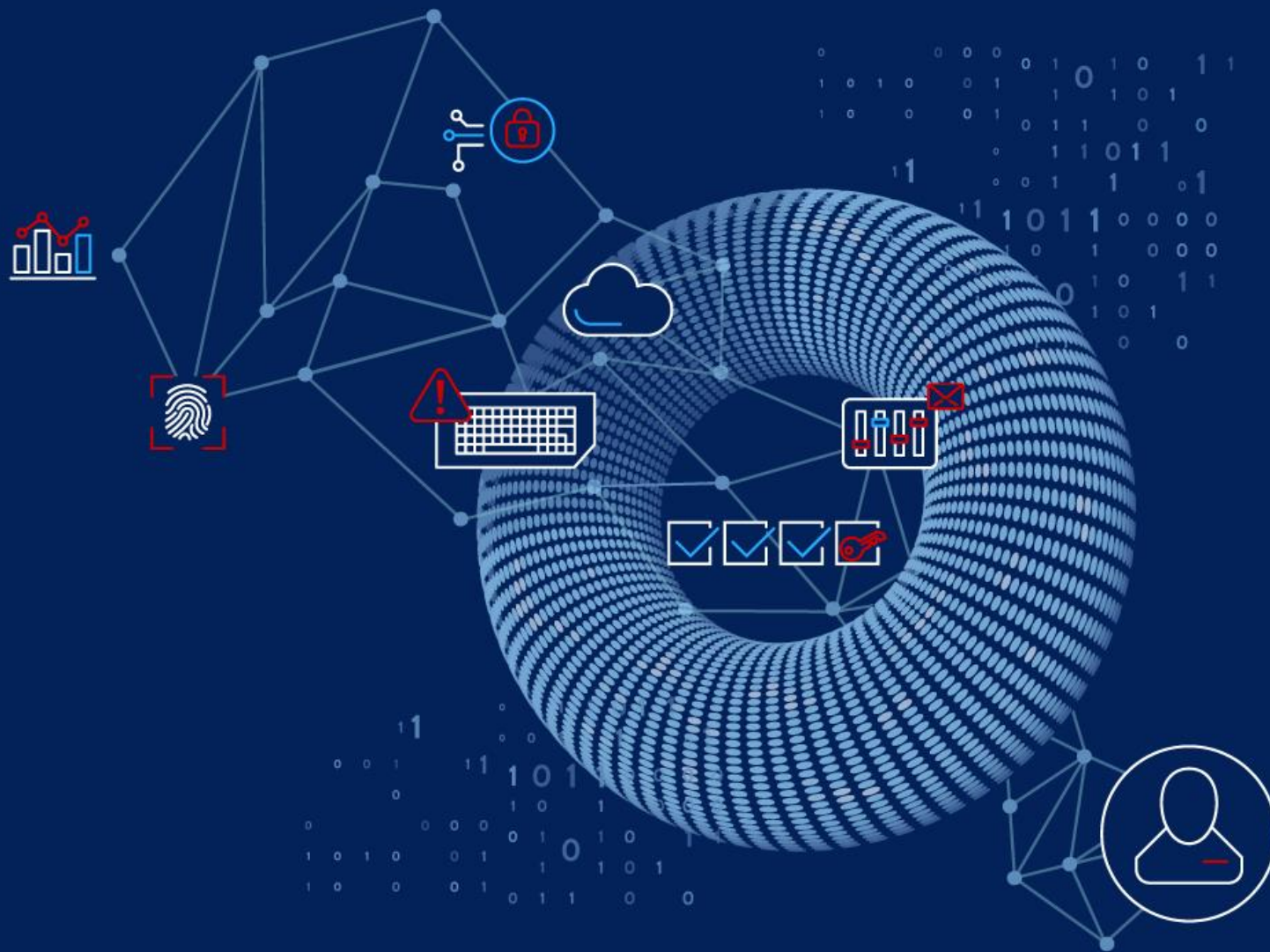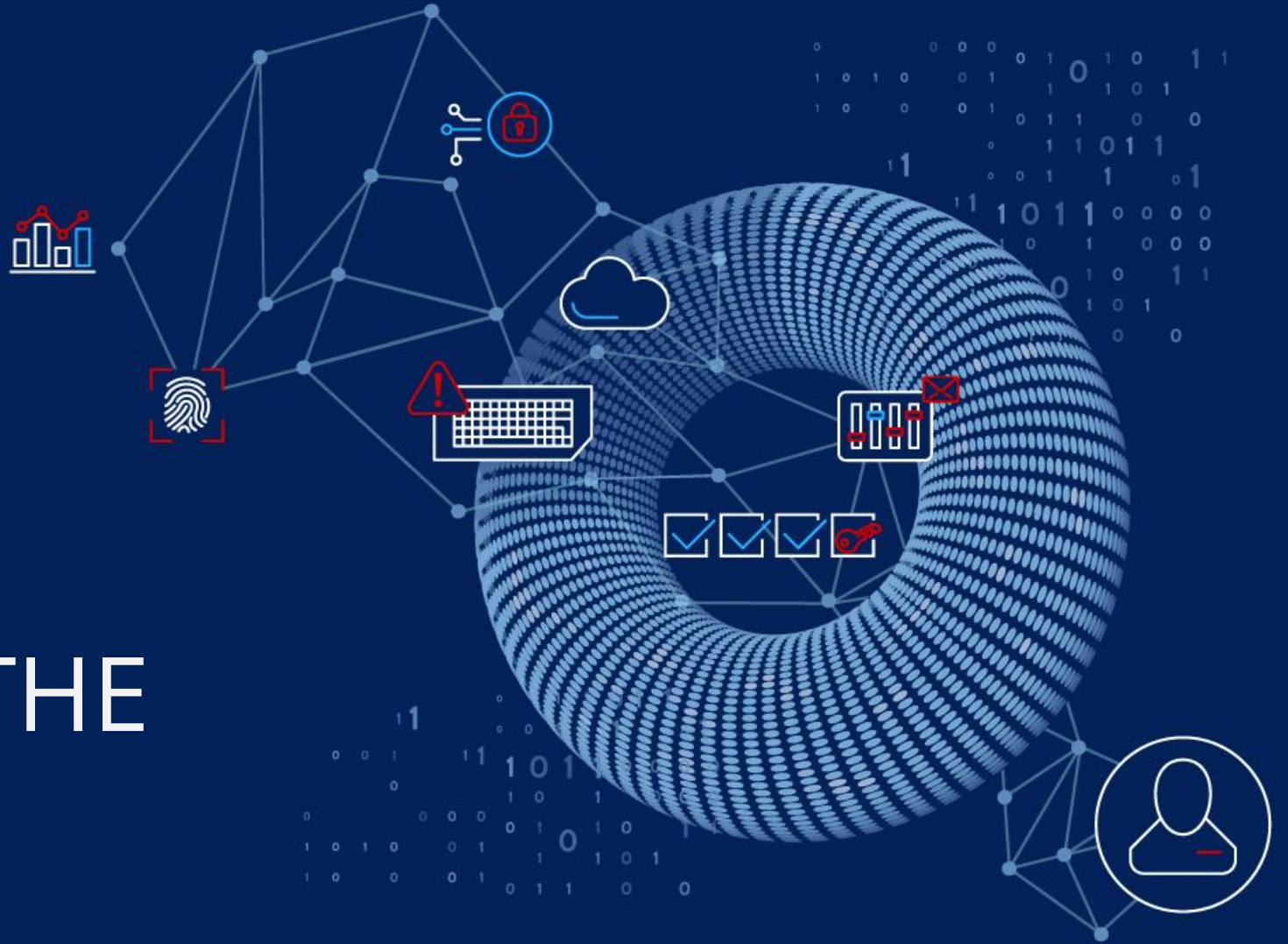# ZABBIX

6.4

ZABBIX UPGRADE TO VERSION 6.4

Edgars Melveris

Technical support engineer

01

PREPARE FOR THE UPGRADE

READ RELEASE NOTES AND UPGRADE NOTES

https://www.zabbix.com/documentation/6.0/en/manual/introduction/whatsnew600

https://www.zabbix.com/documentation/6.0/en/manual/installation/upgrade_notes_600

https://www.zabbix.com/documentation/6.2/en/manual/introduction/whatsnew620

https://www.zabbix.com/documentation/6.2/en/manual/installation/upgrade_notes_620

https://www.zabbix.com/documentation/current/en/manual/introduction/whatsnew640

https://www.zabbix.com/documentation/current/en/manual/installation/upgrade_notes_640

Upgrade from Zabbix version before 6.0

Databases

To create the optimal user experience and ensure the best Zabbix performance in various production environments, the support of some older database releases has been dropped. This primarily applies to the database versions that are nearing their end of service life point and versions with unfixed issues that may interfere with normal performance.

Starting from Zabbix 6.0, the following database versions are officially supported:

- *MySQL/Percona* 8.0.X
- *MariaDB* 10.5.X - 10.6.X
- *PostgreSQL* 13.X
- *Oracle* 19c - 21c
- *TimescaleDB* 2.0.1-2.3
- *SQLite* 3.3.5-3.34.X

By default, Zabbix server and proxy will not start if an unsupported database version is detected. It is now possible, though not recommended, to turn off DB version check by modifying AllowUnsupportedDBVersions configuration parameter for the server or proxy.

Primary keys

Primary keys are now used for all tables, including history tables, in new installations.

There is no automatic upgrade to primary keys for existing installations. Instructions for a **manual upgrade** of history tables to primary keys in pre-existing installations are available for MySQL/MariaDB, PostgreSQL, TimescaleDB v1 and v2, and Oracle.

Deprecated internal items for history/trends

Zabbix agent 2 plugins

User passwords

Bulk processing for Prometheus metrics

Runtime command transfer

Favorite custom graphs no longer supported

Service monitoring

Upgrade from Zabbix version before 6.0

PCRE2 support

Support for PCRE2 has been added. PCRE is still supported, but Zabbix can only be compiled with one of the libraries PCRE or PCRE2, both cannot be used at the same time.

The following Zabbix installation packages have been updated and now use PCRE2:

- RHEL 7 and newer
- SLES (all versions)
- Debian 9 and newer
- Ubuntu 16.04 and newer

Please note that after switching to PCRE2, you may need to update some regular expressions. In particular, the pattern `^[\w-\.]` needs to be changed to `^[-\\w\\.]` to continue working correctly - see Known issues for a more detailed explanation.

Separate processing for ODBC checks

ODBC checks processing is now performed by separate server/proxy processes *odbc pollers*. Previously, ODBC checks were performed by regular pollers, which also work with Zabbix agent items, SSH checks, etc.

A new configuration parameter *StartODBCPollers* has been added to Zabbix server and proxy configuration files with the default value *1*. This parameter may need to be adjusted based on the number of ODBC checks performed by the server or proxy. You may also want to reduce the number of regular pollers set by the *StartPollers* parameter accordingly.

Internal item *zabbix[process,<type>]* can be used to monitor ODBC pollers load.

Upgrade Zabbix version 6.2

Faster configuration sync

Incremental configuration cache synchronization has been added for hosts, host tags, items, item tags, item preprocessing, triggers, trigger tags and functions to lessen synchronization time and database load when configuration is being updated on an already running Zabbix server or Zabbix proxy. As a result of this change, deterministic triggers need to be created during upgrade.

On MySQL and MariaDB, this requires `GLOBAL log_bin_trust_function_creators = 1` to be set if binary logging is enabled and there is no superuser privileges and `log_bin_trust_function_creators = 1` is not set in MySQL configuration file. To set the variable using MySQL console, run:

```
mysql> SET GLOBAL log_bin_trust_function_creators = 1;
```

Once the upgrade has been successfully completed, `log_bin_trust_function_creators` can be disabled:

```
mysql> SET GLOBAL log_bin_trust_function_creators = 0;
```

Triggers are also created for PostgreSQL and Oracle database.

Minimum required PHP version

The minimum required PHP version has been raised from 7.2.5 to 7.4.0.

Secure password hashing

In Zabbix 5.0 password hashing algorithm has been changed from MD5 to the more secure bcrypt. However, in Zabbix versions 5.0 - 6.0, MD5 hashing was still used upon the first user login after an upgrade - to convert passwords with hashes not exceeding 32 bytes from MD5 to bcrypt. Now support of MD5 cryptography has been dropped completely.

If you're upgrading from Zabbix versions before 5.0, users with passwords hashed by MD5 won't be able to log in. In this case, a Super administrator can change passwords of the affected users. If a Super administrator also cannot log in, run the following SQL query to apply the default password to the user (replace 'Admin' with the required username):

```
UPDATE users SET passwd = '$2a$10$ZXIvHAEP2ZM.dLXTm6uPHOMV1ARXX7cqjbhM6Fn0cANzkCQBWpMrS' WHERE username = 'Admin';
```

After running this query, the user's password will be set to *zabbix*. Make sure to change the default password on the first login.

Storage of secrets

In addition to HashiCorp Vault, Zabbix now supports storage of secrets in CyberArk Vault. To distinguish between secret management platforms, a new parameter *$DB['VAULT']* has been added to zabbix.conf.php.

If your Zabbix installation has been configured to work with HashiCorp Vault, after the upgrade you will need to manually update the configuration file. To continue using the HashiCorp integration, add to zabbix.conf.php the variable:

```
$DB['VAULT'] = 'HashiCorp';
```

Additionally, the database credentials will no longer be cached by default. Instead, Zabbix will make a call to the vault API every time when establishing a database connection. To enable storing of retrieved credentials in a local cache, you now need to manually set the option $DB['VAULT_CACHE'] = true.

For more info, see Storage of secrets.

Upgrade Zabbix version 6.4

MySQL version

MySQL versions below 8.0.30 are no longer supported. The minimum required MySQL version has been raised from 8.0.0 to 8.0.30.

libssh version

The minimum required libssh version has been raised from 0.6.0 to 0.9.0.

SLES versions

For SUSE Linux Enterprise Server (SLES) 15 the minimum supported service pack version is now SP4.

SLES 12 with SP4 and newer are also still supported, but due to the older libssh library, support for the SSH checks for this OS version has been discontinued.

Optimized proxy configuration update

Incremental update of the proxy configuration has been introduced in the new version.

As a result the **ConfigFrequency** parameter for active proxies is now deprecated; instead the ProxyConfigFrequency parameter must be used on both server (for passive proxies) and proxy (for active proxies). Note that if both ProxyConfigFrequency and ConfigFrequency are used, the proxy will log an error and terminate.

The default value of ProxyConfigFrequency has been lowered from 3600 to **10** seconds. Also, the default value of CacheUpdateFrequency on the server has been lowered from 60 to **10** seconds.

The server now uses the configuration cache to track proxy configuration changes using revision numbers, so the amount of cached data will increase and it might be necessary to increase the configuration cache size.

Note that the server configuration must be synced before any changes are synced to proxy. So if a user makes some changes and wants them to be synced to the proxy - the server configuration cache must be reloaded first.

Upgrade Zabbix version 6.4

Supported OS's

- RHEL (Alma, CentOS, Oracle Linux, Rocky etc) 8, 9

- Debian 11

- SLES 15

- Ubuntu 20.04, 22.04

Backup database and other important information before the upgrade!

- MySQL database example

```
# mysqldump --single-transaction zabbix | gzip > /tmp/zabbix.backup.sql.gz
```
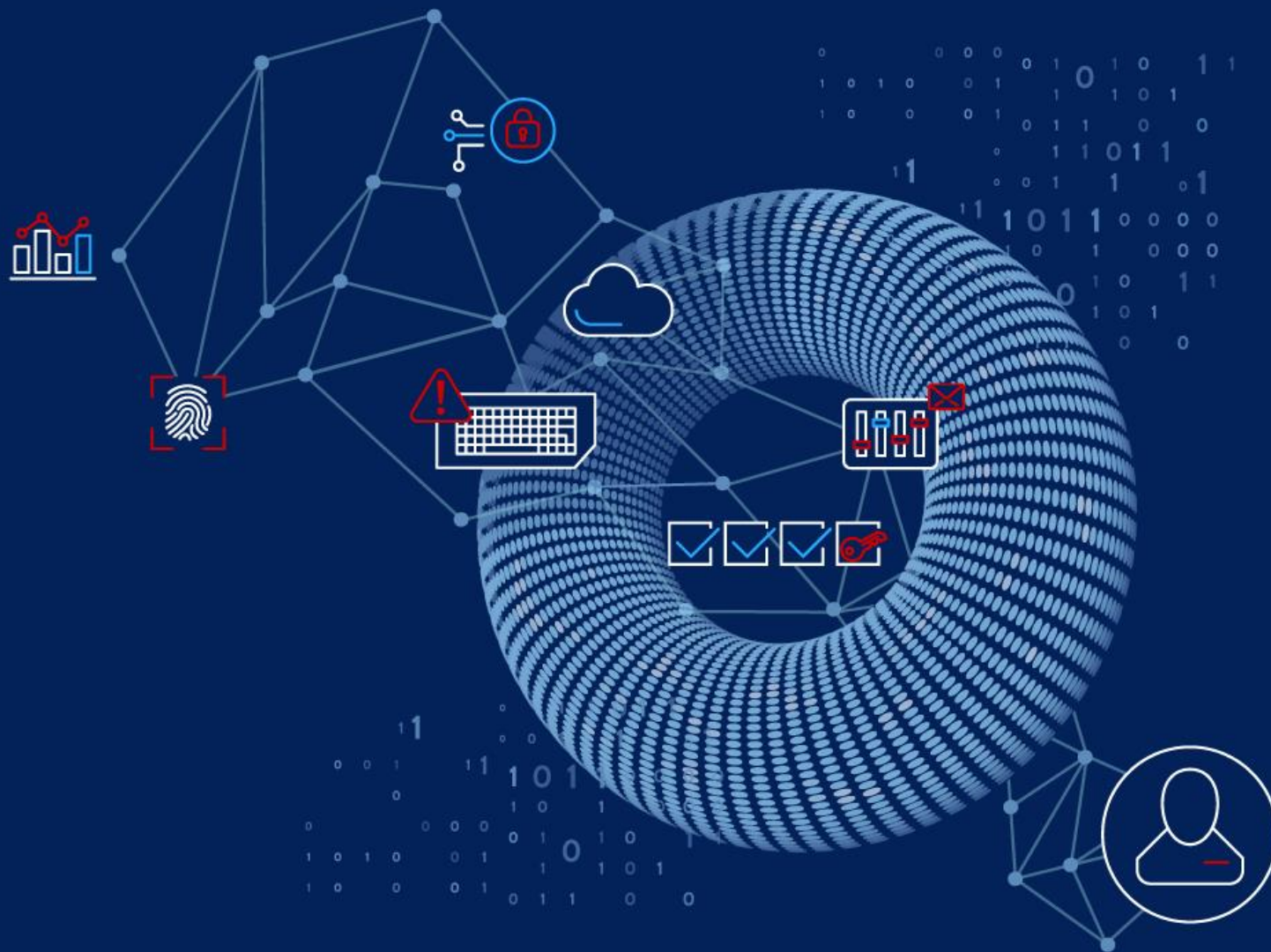
- Postgresql database example

```
# pg_dump -Fc -f /tmp/zabbix.backup.bak zabbix
```
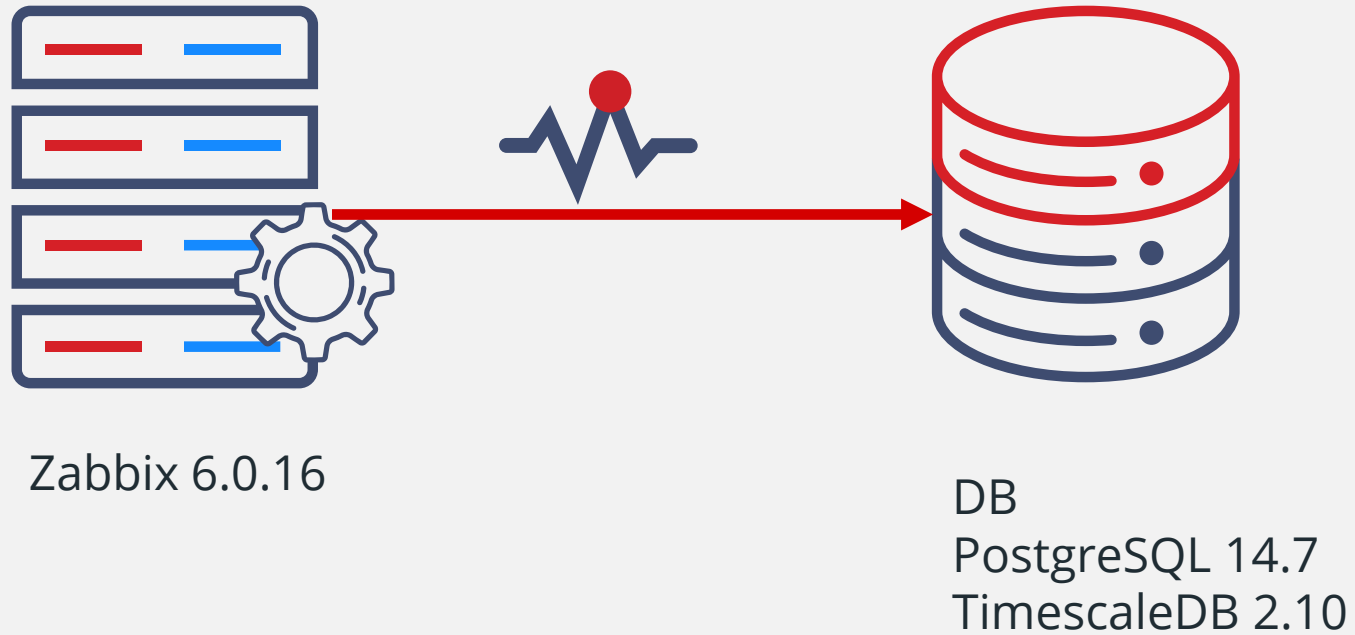
- Config files and any other custom scripts:

```
# mkdir /root/zabbix-backup/
# cp /etc/zabbix/zabbix_server.conf /root/zabbix-backup/
# cp /etc/httpd/conf.d/zabbix.conf  /root/zabbix-backup/
```

02

UPGRADE ON
UBUNTU 22.04

Zabbix on Ubuntu 22.04

Zabbix 6.0.16

DB
PostgreSQL 14.7
TimescaleDB 2.10

Upgrade on Ubuntu 22.04

〜Update the Zabbix repository package:

```
# rm -Rf /etc/apt/sources.list.d/zabbix.list
# wget https://repo.zabbix.com/zabbix/6.4/ubuntu/pool/main/z/zabbix-release/
zabbix-release_6.4-1+ubuntu22.04_all.deb
# dpkg -i zabbix-release_6.4-1+ubuntu22.04_all.deb
# apt-get update
```

〜Update all Zabbix packages

```
# apt-get install --only-upgrade zabbix-server-pgsql zabbix-frontend-php
zabbix-agent zabbix-apache-conf
```

```
Configuration file '/etc/zabbix/zabbix_server.conf'
 ==> Modified (by you or by a script) since installation.
 ==> Package distributor has shipped an updated version.
   What would you like to do about it ?  Your options are:
     Y or I  : install the package maintainer's version
     N or O  : keep your currently-installed version
       D     : show the differences between the versions
       Z     : start a shell to examine the situation
 The default action is to keep your current version.
*** zabbix_server.conf (Y/I/N/O/D/Z) [default=N] ?
```

Watch the Zabbix server log file:

```
32265:20230411:140610.529 Zabbix Server stopped. Zabbix 6.0.16 (revision a90e18c0b6e).
32695:20230411:140610.588 Starting Zabbix Server. Zabbix 6.4.1 (revision 546e284fd7c).
32695:20230411:140610.588 ****** Enabled features ******
32695:20230411:140610.588 SNMP monitoring:          YES
32695:20230411:140610.588 IPMI monitoring:          YES
32695:20230411:140610.588 Web monitoring:           YES
32695:20230411:140610.588 VMware monitoring:        YES
32695:20230411:140610.588 SMTP authentication:      YES
32695:20230411:140610.588 ODBC:                     YES
32695:20230411:140610.588 SSH support:              YES
32695:20230411:140610.588 IPv6 support:             YES
32695:20230411:140610.588 TLS support:              YES
32695:20230411:140610.588 ******************************
32695:20230411:140610.588 using configuration file: /etc/zabbix/zabbix_server.conf
32695:20230411:140610.960 current database version (mandatory/optional): 06000000/06000020
32695:20230411:140610.960 required mandatory version: 06040000
32695:20230411:140610.960 mandatory patches were found
32695:20230411:140610.965 starting automatic database upgrade
32695:20230411:140610.976 completed 0% of database upgrade
32695:20230411:140610.999 completed 1% of database upgrade
32695:20230411:140611.187 completed 2% of database upgrade
32695:20230411:140611.243 completed 3% of database upgrade
```

Continue watching the Zabbix server log file:

```
32695:20230411:140613.203 completed 91% of database upgrade
32695:20230411:140613.214 completed 92% of database upgrade
32695:20230411:140613.230 completed 93% of database upgrade
32695:20230411:140613.275 completed 94% of database upgrade
32695:20230411:140613.318 completed 95% of database upgrade
32695:20230411:140613.344 completed 96% of database upgrade
32695:20230411:140613.368 completed 97% of database upgrade
32695:20230411:140613.378 completed 98% of database upgrade
32695:20230411:140613.392 completed 99% of database upgrade
32695:20230411:140613.403 completed 100% of database upgrade
32695:20230411:140613.403 database upgrade fully completed
32716:20230411:140613.675 starting HA manager
32716:20230411:140613.735 HA manager started in active mode
32695:20230411:140613.737 server #0 started [main process]
32718:20230411:140613.739 server #1 started [service manager #1]
32719:20230411:140613.742 server #2 started [configuration syncer #1]
32723:20230411:140614.214 server #3 started [alert manager #1]
32724:20230411:140614.216 server #4 started [alerter #1]
32725:20230411:140614.218 server #5 started [alerter #2]
32726:20230411:140614.221 server #6 started [alerter #3]
32728:20230411:140614.229 server #7 started [preprocessing manager #1]
32729:20230411:140614.232 server #8 started [lld manager #1]
```
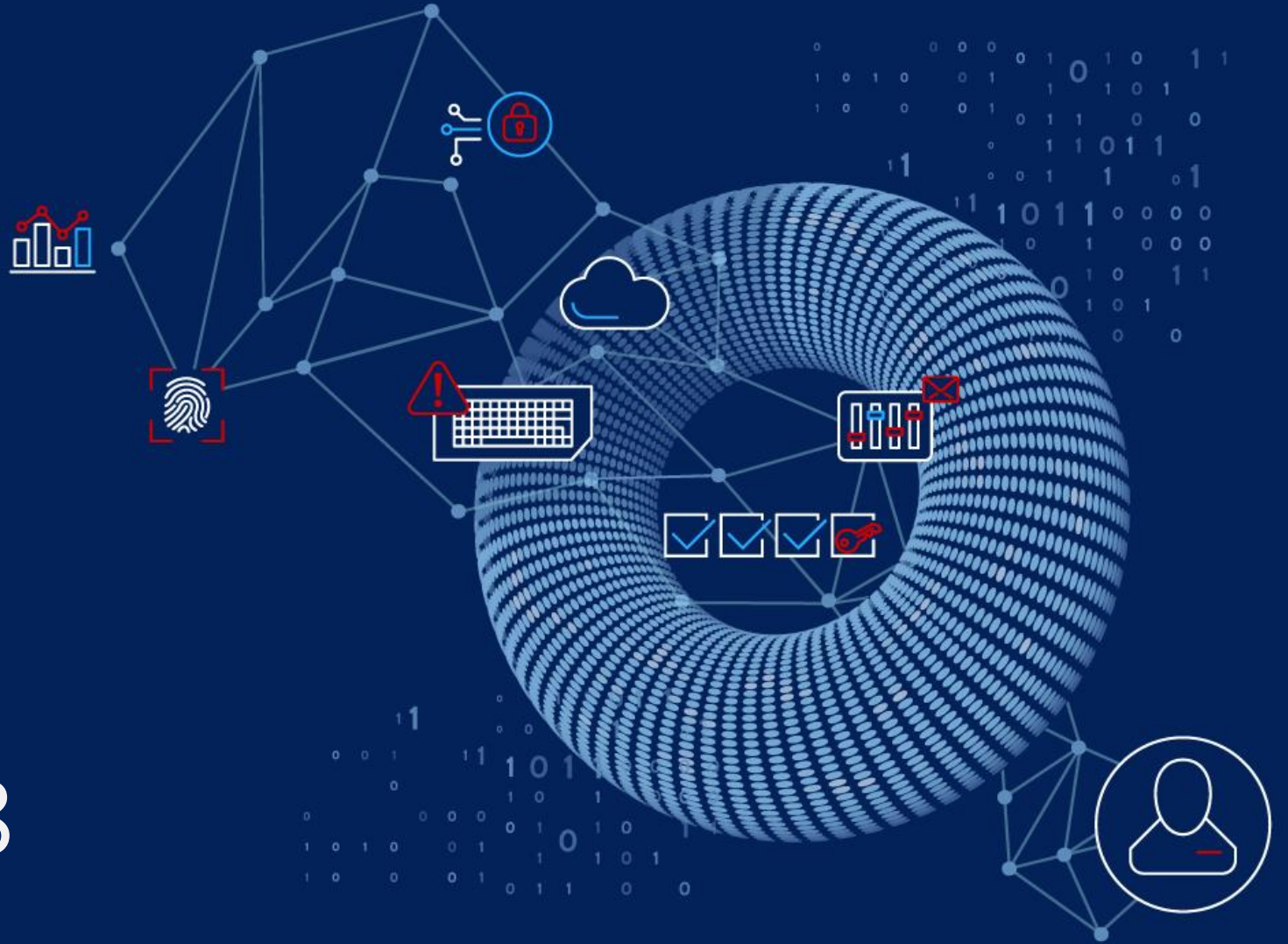
Zabbix upgrade is succesfully completed

03

UPGRADE ON
ROCKY LINUX 8

Zabbix on Rocky 8 with HA

Node1
Zabbx 6.0.16

DB
Mysql 8.0.30

Node2
Zabbix 6.0.16
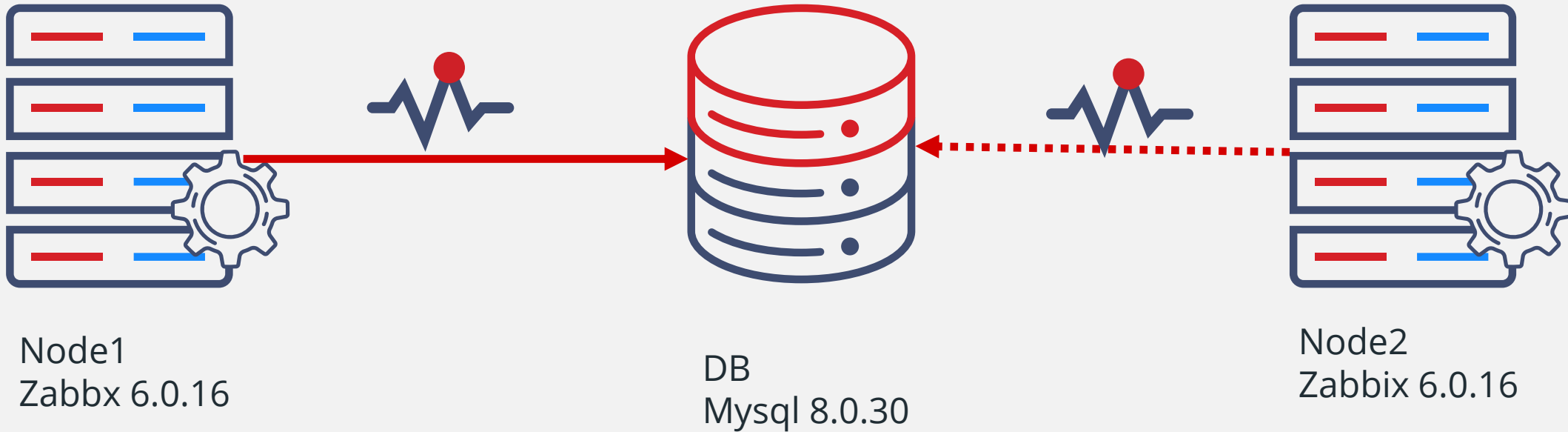
Upgrade on Rocky linux 8

〜Update the Zabbix repository package on standby node:

```
# dnf install https://repo.zabbix.com/zabbix/6.4/rhel/8/x86_64/
zabbix-release-6.4-1.el8.noarch.rpm
```

〜Update all Zabbix packages

```
# dnf upgrade zabbix-server-mysql zabbix-web-mysql zabbix-apache-conf
zabbix-sql-scripts zabbix-agent
```

```
================================================================================
 Package                        Architecture        Version                 Repository
================================================================================
Upgrading:
 zabbix-agent                   x86_64              6.4.1-release1.el8       zabbix
 zabbix-apache-conf             noarch              6.4.1-release1.el8       zabbix
 zabbix-selinux-policy          x86_64              6.4.1-release1.el8       zabbix
 zabbix-server-mysql            x86_64              6.4.1-release1.el8       zabbix
 zabbix-sql-scripts             noarch              6.4.1-release1.el8       zabbix
 zabbix-web                     noarch              6.4.1-release1.el8       zabbix
 zabbix-web-deps                noarch              6.4.1-release1.el8       zabbix
 zabbix-web-mysql               noarch              6.4.1-release1.el8       zabbix

Transaction Summary
================================================================================
Upgrade  8 Packages

Total download size: 18 M
Is this ok [y/N]: y
```

Watch the Zabbix server log file:

```
19338:20230413:081108.786 Zabbix Server stopped. Zabbix 6.4.1 (revision 546e284fd7c).
19354:20230413:081120.930 Starting Zabbix Server. Zabbix 6.4.1 (revision 546e284fd7c).
19354:20230413:081120.930 ****** Enabled features ******
19354:20230413:081120.930 SNMP monitoring:           YES
19354:20230413:081120.930 IPMI monitoring:           YES
19354:20230413:081120.930 Web monitoring:            YES
19354:20230413:081120.930 VMware monitoring:         YES
19354:20230413:081120.930 SMTP authentication:       YES
19354:20230413:081120.930 ODBC:                      YES
19354:20230413:081120.930 SSH support:               YES
19354:20230413:081120.930 IPv6 support:              YES
19354:20230413:081120.930 TLS support:               YES
19354:20230413:081120.930 *****************************
19354:20230413:081120.930 using configuration file: /etc/zabbix/zabbix_server.conf
19354:20230413:081120.956 current database version (mandatory/optional): 06000000/06000020
19354:20230413:081120.956 required mandatory version: 06040000
19354:20230413:081120.956 mandatory patches were found
19354:20230413:081120.960 cannot perform database upgrade: node "zbx-node2" is still running,
if node is unreachable it will be skipped in 1m 0s
19354:20230413:081120.960 cannot perform database upgrade in HA mode:
all nodes need to be stopped and Zabbix server started in standalone mode for the time of upgrade.
19354:20230413:081120.960 Zabbix Server stopped. Zabbix 6.4.1 (revision 546e284fd7c).
```

```
systemctl stop zabbix-server
```

Repeat the same steps on the Zabbix server active node

```
# rpm -Uvh https://repo.zabbix.com/zabbix/6.4/rhel/8/x86_64/
zabbix-release-6.4-1.el8.noarch.rpm
```

```
# dnf upgrade zabbix-server-mysql zabbix-web-mysql zabbix-apache-conf
zabbix-sql-scripts zabbix-agent
```

```
================================================================================
 Package                    Architecture        Version                    Repository
================================================================================
Upgrading:
 zabbix-agent               x86_64              6.4.1-release1.el8          zabbix
 zabbix-apache-conf         noarch              6.4.1-release1.el8          zabbix
 zabbix-selinux-policy      x86_64              6.4.1-release1.el8          zabbix
 zabbix-server-mysql        x86_64              6.4.1-release1.el8          zabbix
 zabbix-sql-scripts         noarch              6.4.1-release1.el8          zabbix
 zabbix-web                 noarch              6.4.1-release1.el8          zabbix
 zabbix-web-deps            noarch              6.4.1-release1.el8          zabbix
 zabbix-web-mysql           noarch              6.4.1-release1.el8          zabbix

Transaction Summary
================================================================================
Upgrade   8 Packages

Total download size: 18 M
Is this ok [y/N]: y
```

Upgrade fails again:

```
18870:20230413:082200.876 Zabbix Server stopped. Zabbix 6.4.1 (revision 546e284fd7c).
18874:20230413:082213.042 Starting Zabbix Server. Zabbix 6.4.1 (revision 546e284fd7c).
18874:20230413:082213.042 ****** Enabled features ******
18874:20230413:082213.042 SNMP monitoring:            YES
18874:20230413:082213.042 IPMI monitoring:            YES
18874:20230413:082213.042 Web monitoring:             YES
18874:20230413:082213.042 VMware monitoring:          YES
18874:20230413:082213.042 SMTP authentication:        YES
18874:20230413:082213.042 ODBC:                       YES
18874:20230413:082213.042 SSH support:                YES
18874:20230413:082213.042 IPv6 support:               YES
18874:20230413:082213.042 TLS support:                YES
18874:20230413:082213.042 ******************************
18874:20230413:082213.042 using configuration file: /etc/zabbix/zabbix_server.conf
18874:20230413:082213.090 current database version (mandatory/optional): 06000000/06000020
18874:20230413:082213.090 required mandatory version: 06040000
18874:20230413:082213.090 mandatory patches were found
18874:20230413:082213.100 cannot perform database upgrade in HA mode: all nodes need to be
stopped and Zabbix server started in standalone mode for the time of upgrade.
18874:20230413:082213.100 Zabbix Server stopped. Zabbix 6.4.1 (revision 546e284fd7c).
```

Read Zabbix upgrade notes

Upgrading HA cluster

To perform a major version upgrade for the HA nodes:

- stop all nodes;
- create a full database backup;
- if the database uses replication make sure that all nodes are in sync and have no issues. Do not upgrade if replication is broken.
- select a single node that will perform database upgrade, change its configuration to standalone mode by commenting out HANodeName and upgrade it;
- make sure that database upgrade is fully completed (*System information* should display that Zabbix server is running);
- restart the node in HA mode;
- upgrade and start the rest of nodes (it is not required to change them to standalone mode as the database is already upgraded at this point).

In a minor version upgrade it is sufficient to upgrade the first node, make sure it has upgraded and running, and then start upgrade on the next node.

∿ Edit Zabbix server configuration file and comment out HANodeName parameter:

```
# HANodeName=zbx-node2
```

∿ Restart Zabbix server

```
[root@Zabbix-node2 ~]# systemctl restart zabbix-server
```

Upgrade failed again:

```
18993:20230411:122201.004 starting automatic database upgrade
18993:20230411:122201.010 completed 0% of database upgrade
18993:20230411:122201.209 completed 1% of database upgrade
18993:20230411:122202.986 completed 2% of database upgrade
18993:20230411:122204.176 completed 3% of database upgrade
18993:20230411:122204.803 completed 4% of database upgrade
18993:20230411:122205.120 completed 5% of database upgrade
18993:20230411:122205.437 completed 6% of database upgrade
18993:20230411:122205.788 completed 7% of database upgrade
18993:20230411:122206.146 completed 8% of database upgrade
18993:20230411:122206.180 completed 9% of database upgrade
18993:20230411:122206.197 completed 10% of database upgrade
18993:20230411:122206.594 completed 11% of database upgrade
18993:20230411:122206.904 completed 12% of database upgrade
18993:20230411:122206.986 completed 13% of database upgrade
18993:20230411:122207.043 completed 14% of database upgrade
18993:20230411:122207.189 completed 15% of database upgrade
18993:20230411:122207.583 completed 16% of database upgrade
18993:20230411:122207.650 completed 17% of database upgrade
18993:20230411:122207.651 [Z3005] query failed: [1419] You do not have the SUPER privilege and binary
logging is enabled (you *might* want to use the less safe log_bin_trust_function_creators variable)
[create trigger hosts_insert after insert on hosts for each row insert into changelog
object,objectid,operation,clock)
values (1,new.hostid,1,unix_timestamp())]
18993:20230411:122207.653 database upgrade failed on patch 06010049, exiting in 10 seconds
18993:20230411:122217.654 Zabbix Server stopped. Zabbix 6.4.1 (revision 546e284fd7c).
```

Fix the problem with MySQL privileges:

```
# mysql
mysql> set global log_bin_trust_function_creators = 1;
```

〜Upgrade will continue:

```
19177:20230411:122530.093 database upgrade failed on patch 06010049, exiting in 10 seconds
19177:20230411:122540.094 Zabbix Server stopped. Zabbix 6.4.1 (revision 546e284fd7c).
19182:20230411:122550.301 Starting Zabbix Server. Zabbix 6.4.1 (revision 546e284fd7c).
19182:20230411:122550.301 ****** Enabled features ******
19182:20230411:122550.301 SNMP monitoring:            YES
19182:20230411:122550.301 IPMI monitoring:            YES
19182:20230411:122550.301 Web monitoring:             YES
19182:20230411:122550.301 VMware monitoring:          YES
19182:20230411:122550.301 SMTP authentication:        YES
19182:20230411:122550.301 ODBC:                       YES
19182:20230411:122550.301 SSH support:                YES
19182:20230411:122550.301 IPv6 support:               YES
19182:20230411:122550.301 TLS support:                YES
19182:20230411:122550.301 ******************************
19182:20230411:122550.301 using configuration file: /etc/zabbix/zabbix_server.conf
19182:20230411:122550.331 current database version (mandatory/optional): 06010048/06010048
19182:20230411:122550.331 required mandatory version: 06040000
19182:20230411:122550.331 mandatory patches were found
19182:20230411:122550.335 starting automatic database upgrade
19182:20230411:122550.358 completed 0% of database upgrade
19182:20230411:122550.404 completed 1% of database upgrade
```

Upgrade is completed:

```
19182:20230411:122620.541 completed 93% of database upgrade
 19182:20230411:122620.757 completed 94% of database upgrade
 19182:20230411:122621.063 completed 95% of database upgrade
 19182:20230411:122621.162 completed 96% of database upgrade
 19182:20230411:122621.298 completed 97% of database upgrade
 19182:20230411:122621.463 completed 98% of database upgrade
 19182:20230411:122621.571 completed 99% of database upgrade
 19182:20230411:122621.814 completed 100% of database upgrade
 19182:20230411:122622.067 database upgrade fully completed
 19287:20230411:122622.126 starting HA manager
 19287:20230411:122622.147 HA manager started in active mode
 19182:20230411:122622.149 server #0 started [main process]
 19288:20230411:122622.151 server #1 started [service manager #1]
 19289:20230411:122622.153 server #2 started [configuration syncer #1]
 19306:20230411:122622.804 server #19 started [escalator #1]
 19293:20230411:122622.808 server #6 started [alerter #3]
```

MySQL option log_bin_trust_function_creators can be turned off:

```
# mysql
mysql> set global log_bin_trust_function_creators = 0;
```

Enable HA agin on the active node

~∿~ Edit Zabbix server configuration file and comment out HANodeName parameter:

```
HANodeName=zbx-node2
```

~∿~ Restart Zabbix server

```
systemctl restart zabbix-server
```

```
19057:20230413:082943.306 Zabbix Server stopped. Zabbix 6.4.1 (revision 546e284fd7c).
19418:20230413:082943.393 Starting Zabbix Server. Zabbix 6.4.1 (revision 546e284fd7c).
19418:20230413:082943.394 ****** Enabled features ******
19418:20230413:082943.394 SNMP monitoring:           YES
19418:20230413:082943.394 Web monitoring:            YES
19418:20230413:082943.394 VMware monitoring:         YES
19418:20230413:082943.394 SMTP authentication:       YES
19418:20230413:082943.394 ODBC:                      YES
19418:20230413:082943.394 SSH support:               YES
19418:20230413:082943.394 IPv6 support:              YES
19418:20230413:082943.394 TLS support:               YES
19418:20230413:082943.394 *****************************
19418:20230413:082943.394 using configuration file: /etc/zabbix/zabbix_server.conf
19418:20230413:082943.672 current database version (mandatory/optional): 06040000/06040000
19418:20230413:082943.672 required mandatory version: 06040000
19419:20230413:082943.969 starting HA manager
19419:20230413:082944.182 HA manager started in active mode
```
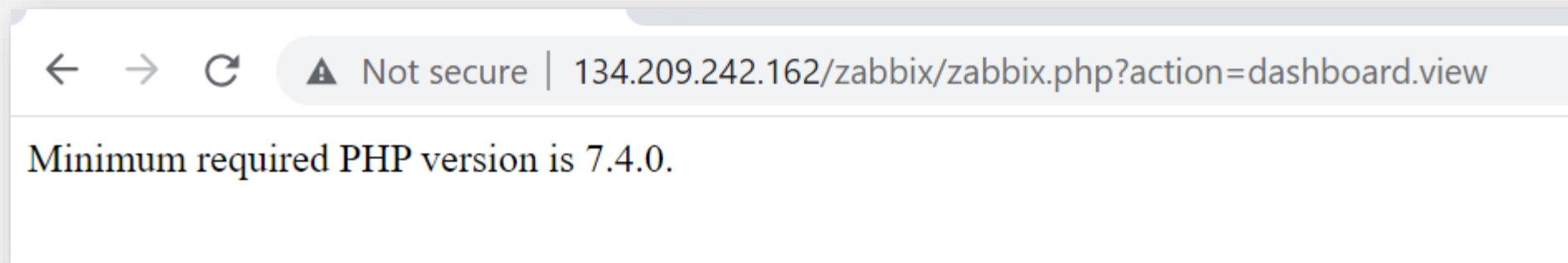
Node1 was stopped, but HA was not turned off on this node

～Just start the node 1 again in standby mode

```
systemctl restart zabbix-server
```

```
20345:20230413:083118.348 Starting Zabbix Server. Zabbix 6.4.1 (revision 546e284fd7c).
20345:20230413:083118.348 ****** Enabled features ******
20345:20230413:083118.348 SNMP monitoring:           YES
20345:20230413:083118.348 IPMI monitoring:           YES
20345:20230413:083118.348 Web monitoring:            YES
20345:20230413:083118.348 VMware monitoring:         YES
20345:20230413:083118.348 SMTP authentication:       YES
20345:20230413:083118.348 ODBC:                      YES
20345:20230413:083118.348 SSH support:               YES
20345:20230413:083118.348 IPv6 support:              YES
20345:20230413:083118.348 TLS support:               YES
20345:20230413:083118.348 *****************************
20345:20230413:083118.348 using configuration file: /etc/zabbix/zabbix_server.conf
20345:20230413:083118.385 current database version (mandatory/optional): 06040000/06040000
20345:20230413:083118.385 required mandatory version: 06040000
20349:20230413:083118.409 starting HA manager
20349:20230413:083118.464 HA manager started in standby mode
20345:20230413:083118.464 "zbx-node1" node started in "standby" mode
```

Frontend also will not work automatically

A → C ▲ Not secure | 134.209.242.162/zabbix/zabbix.php?action=dashboard.view

Minimum required PHP version is 7.4.0.

∿ Minimum required PHP version is 7.4.0

∿ PHP 8.0 is recommended

```
# dnf module switch-to php:8.0
```

```
================================================================================
Package                    Architecture        Version                           Repository
================================================================================
Upgrading:
 php-bcmath                x86_64              8.0.27-1.module+el8.7.0+1156+de6c8de9    appstream
 php-common                x86_64              8.0.27-1.module+el8.7.0+1156+de6c8de9    appstream
    replacing  php-json.x86_64 7.2.24-1.module+el8.4.0+413+c9202dda
 php-fpm                   x86_64              8.0.27-1.module+el8.7.0+1156+de6c8de9    appstream
 php-gd                    x86_64              8.0.27-1.module+el8.7.0+1156+de6c8de9    appstream
 php-ldap                  x86_64              8.0.27-1.module+el8.7.0+1156+de6c8de9    appstream
 php-mbstring              x86_64              8.0.27-1.module+el8.7.0+1156+de6c8de9    appstream
 php-mysqlnd               x86_64              8.0.27-1.module+el8.7.0+1156+de6c8de9    appstream
 php-pdo                   x86_64              8.0.27-1.module+el8.7.0+1156+de6c8de9    appstream
 php-xml                   x86_64              8.0.27-1.module+el8.7.0+1156+de6c8de9    appstream
Installing dependencies:
 oniguruma                 x86_64              6.8.2-2.el8                             appstream
Switching module streams:
 php                                           7.2 -> 8.0
```

Zabbix upgrade is succesfully completed

04

ZABBIX PROXY
UPGRADE
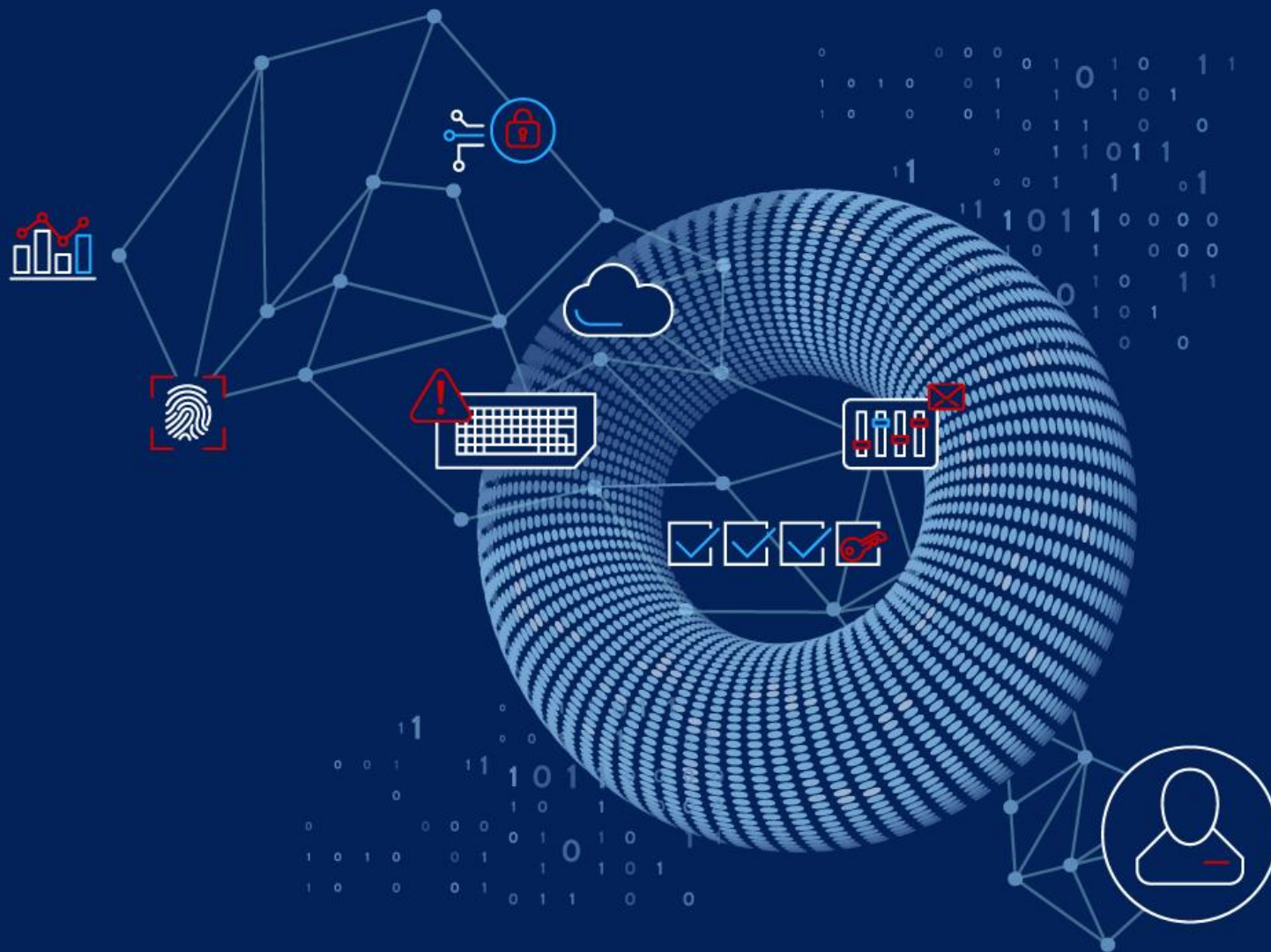
Data from older proxies are now supported

- ∿ Proxy version and compatibility is displayed in Zabbix frontend
- ∿ All proxies till the previous LTS release have limited compatibilty (will send data)
- ∿ Configuration updates are possible only for current release

☐	Name ▲	Mode	Encryption	Version	Last seen (age)	Host count	Item count	Required vps ▲
☐	Proxy Amsterdam	Active	None	6.4.0	6s	453	12344	240.32
☐	Proxy Antwerp	Passive	None	6.4.1	6s	53	450	68.89
☐	Proxy Brussels	Active	None	6.4.0	6s	24	368	127.44
☐	Proxy Eindhoven	Passive	None	6.4.1	6s	146	858	17.37
☐	Proxy Gent	Active	None	5.0.22 ℹ	5s	76	4310	32.5
☐	Proxy Luxembourg	Active	None	6.4.1			12104	87.91
☐	Proxy Rotterdam	Active	None	6.2.6 ℹ	6s	5	168	2.93
☐	Proxy Utrecht	Active	None	6.0.12 ℹ	6s	89	2165	18.49

Proxy version is not supported by server version 6.4.1.

Proxy version is outdated, only data collection and remote execution is available with server version 6.4.1.

0 selected   Refresh configuration   Enable hosts   Disable hosts   Delete

```
19451:20230413:082945.199 Proxy "Proxy Rotterdam" version 6.2.6 is outdated,
only data collection and remote execution is available with server version 6.4.1.
19454:20230413:082945.200 Proxy "Proxy Utrecht" version 6.0.12 is outdated,
only data collection and remote execution is available with server version 6.4.1.
```

Zabbix server automatically detects outdated proxies

- All proxies are discovered by LLD rule
- Items and triggers are created automatically for each proxy

| Trigger prototype | Tags 1 | Dependencies 1 |

* Name	Proxy [{#PROXY.NAME}]: Zabbix proxy is incompatible
Event name	Proxy [{#PROXY.NAME}]: Zabbix proxy is incompatible
Operational data	Current value: {ITEM.LASTVALUE1}
Severity	Not classified | Information | Warning | Average | High | Disaster
* Expression	`last(/Zabbix server/zabbix.proxy.compatibility[{#PROXY.NAME}],#1)<>1`

Expression constructor

- Problems with incompatible proxies will be automatically detected

	Time ▼	Severity	Recovery time	Status	Info	Host	Problem	Duration	Update	Actions	Tags
☐	2023-04-05 15:45:16	Warning		PROBLEM		Zabbix server	Proxy [Proxy Utrecht]: Zabbix proxy is incompatible ?	7d 20h 26m	Update		class: software | component: proxy | proxy-name: Proxy Utr... •••
☐	2023-04-05 15:45:16	Warning		PROBLEM		Zabbix server	Proxy [Proxy Gent]: Zabbix proxy is incompatible ?	7d 20h 26m	Update		class: software | component: proxy | proxy-name: Proxy Gent •••
☐	2023-04-05 15:41:16	Warning		PROBLEM		Zabbix server	Proxy [Proxy Rotterdam]: Zabbix proxy is incompatible ?	7d 20h 30m	Update		class: software | component: proxy | proxy-name: Proxy Ro... •••

Displaying 3 of 3 found

Upgrade Zabbix proxies

 ⚡ Start the upgrade process

```
# dnf update zabbix-proxy*
```

 ⚡ Watch Zabbix proxy log file

```
tail -f /var/log/zabbix/zabbix_proxy.log
```

```
5995:20230411:133725.890 proxy #26 started [poller #5]
5996:20230411:133725.894 proxy #27 started [unreachable poller #1]
5997:20230411:133725.899 proxy #28 started [icmp pinger #1]
5998:20230411:133725.899 proxy #29 started [history poller #1]
5999:20230411:133725.904 proxy #30 started [availability manager #1]
6000:20230411:133725.905 proxy #31 started [odbc poller #1]
5969:20230411:133812.922 Got signal [signal:15(SIGTERM),sender_pid:5,sender_uid:0,reason:0].
Exiting ...
5985:20230411:133813.105 syncing history data in progress...
5985:20230411:133813.105 syncing history data done
5969:20230411:133813.195 Zabbix Proxy stopped. Zabbix 6.0.16 (revision a90e18c0b6e).
```

Zabbix proxy might not start after the upgrade

〰 Start it from commandline to detect the problem

```
# zabbix_proxy
zabbix_proxy
zabbix_proxy [6164]: unknown parameter "StartHistoryPollers" in config file
"/etc/zabbix/zabbix_proxy.conf", line 317
```

〰 Read the upgrade notes

https://www.zabbix.com/documentation/6.2/en/manual/installation/upgrade_notes_620
#history-pollers-removed-from-zabbix-proxy

〰 Edit Zabbix proxy configuration file and comment out the parameter with #

```
# vi /etc/zabbix/zabbix_proxy.conf
# StartHistoryPollers=10
```

Sqlite3 DB upgrade (replacement) is now fully automatic:

- Existing database file will be automatically deleted
- New database file will be automatically created after the upgrade

```
6222:20230411:134304.476 The proxy does not match Zabbix database.
Current database version (mandatory/optional): 06000000/06000020.
Required mandatory version: 06040000.
6222:20230411:134304.476 Zabbix does not support SQLite3 database upgrade.
6222:20230411:134304.476 removing database file: "/tmp/zabbix_proxy"
6222:20230411:134304.477 cannot open database file "/tmp/zabbix_proxy": No such file or
directory
6222:20230411:134304.477 creating database ...
```

Check the frontend if all proxies are fine

〰️ All proxies will display no warning symbols

〰️ No problems are detected by Zabbix server host

	Name ▲	Mode	Encryption	Version	Last seen (age)	Host count	Item count	Required vps
☐	Proxy Amsterdam	Active	None	6.4.1	7s	56	1264	49.24
☐	Proxy Antwerp	Passive	None	6.4.1	7s	9	564	7.05
☐	Proxy Brussels	Active	None	6.4.0	7s	38	841	23.54
☐	Proxy Eindhoven	Passive	None	6.4.1	7s	167	3678	143.67
☐	Proxy Gent	Active	None	6.4.1	7s	23	476	17.32
☐	Proxy Luxembourg	Active	None	6.4.1	7s	259	5932	187.34
☐	Proxy Rotterdam	Active	None	6.4.1	6s	172	3675	85.43
☐	Proxy Utrecht	Active	None	6.4.1	7s	32	625	43.59

05

POST UPGRADE TASKS
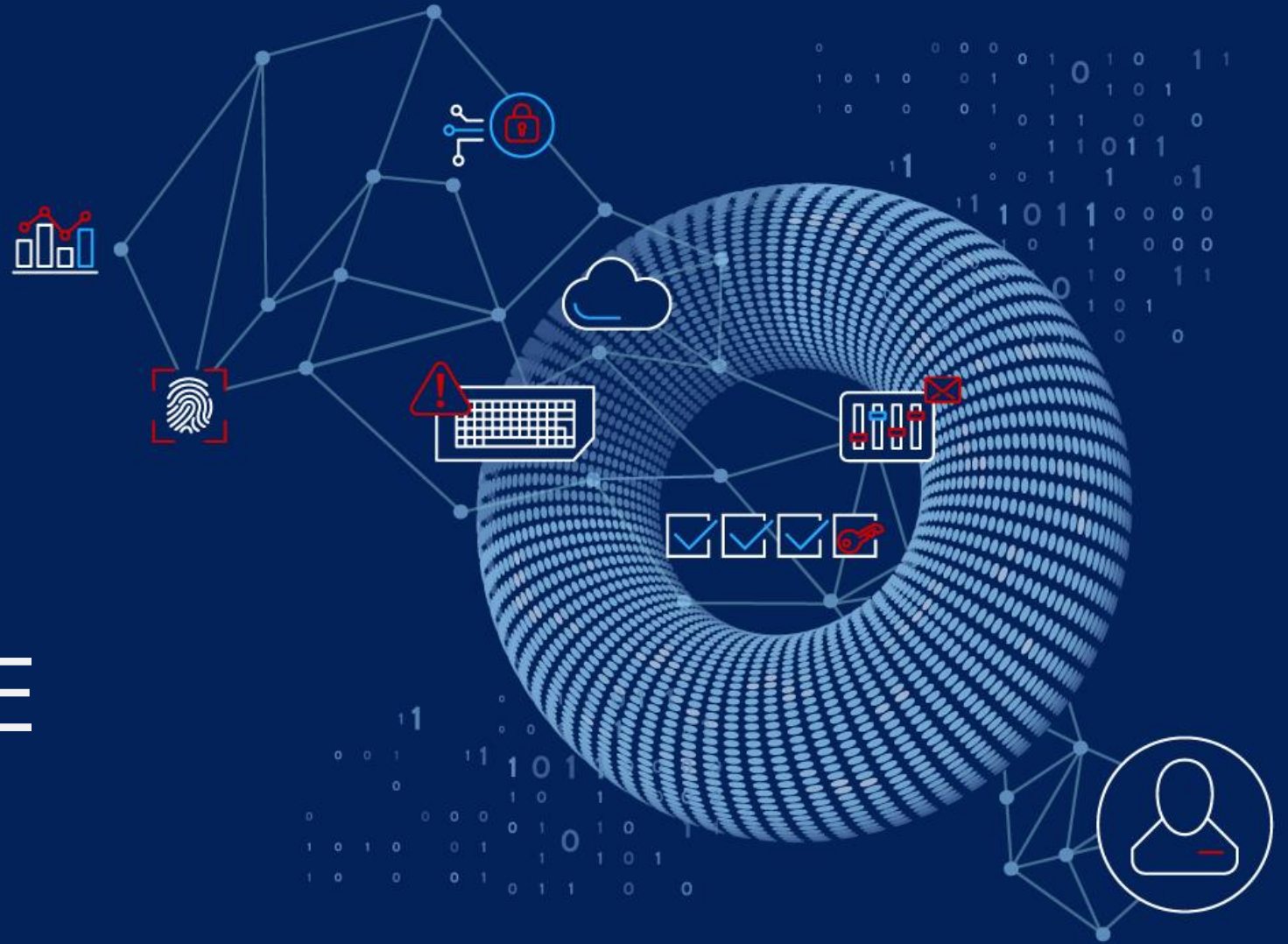
As a minumum update Zabbix internal templates:

∿ Download latest versions from Zabbix git repository

https://git.zabbix.com/projects/ZBX/repos/zabbix/browse/templates/app/zabbix_server/template_app_zabbix_server.yaml?at=refs%2Fheads%2Frelease%2F6.4

https://git.zabbix.com/projects/ZBX/repos/zabbix/browse/templates/app/zabbix_proxy?at=refs%2Fheads%2Frelease%2F6.4

Zabbix / Zabbix

👁 Watch

Source

⑂ release/6.4 ⌄ ...   Zabbix / templates / app / **zabbix_server** /   Browse Filter

Source	Description	Size	Last Modified
..			
📄 README.md	.........T [ZBXNEXT-8217] updated descriptions after proof read	32.53 KB	01 Feb 2023
📄 template_app_zabbix_server.yaml	.........T [ZBXNEXT-8217] generated vendor fields for templates	103.16 KB	13 Mar 2023

📄 README.md

Zabbix server health

Import updated versions of the templates

Templates

▼ Updated

▼ Templates

    Zabbix server health

▼ Items

    Zabbix stats cluster

    Zabbix server: LLD queue

    Zabbix server: Preprocessing queue

    Zabbix server: Utilization of alerter i...

    Zabbix server: Utilization of alert m...

    Zabbix server: Utilization of alert sy...

    Zabbix server: Utilization of availab...

    Zabbix server: Utilization of configu...

    Zabbix server: Utilization of discov...

    Zabbix server: Utilization of escalat...

```
templates:
  -
    template: 'Zabbix server health'
    name: 'Zabbix server health'
-   description: 'Template tooling version used: 0.41'
+   description: "This template is designed to monitor internal Zabbix metrics on the local Zabbix server.\r\n\r\nLink this template to the local Z
    groups:
      -
        name: Templates/Applications
    tags:
      -
        tag: class
        value: software
      -
        tag: target
        value: server
      -
        tag: target
        value: zabbix
+   vendor:
+     name: Zabbix
+     version: 6.4-0
+   macros:
+     -
+       macro: '{$PROXY.LAST_SEEN.MAX}'
```

Import   **Cancel**

✓ Imported successfully

All imported templates will have a vendor and version:

	Name ▲	Hosts	Items	Triggers	Graphs	Dashboards	Discovery	Web	Vendor	Version
☐	Remote Zabbix proxy health	Hosts	Items 40	Triggers 29	Graphs 5	Dashboards 1	Discovery	Web	Zabbix	6.4-0
☐	Remote Zabbix server health	Hosts	Items 61	Triggers 44	Graphs 11	Dashboards 2	Discovery 2	Web	Zabbix	6.4-0
☐	Zabbix proxy health	Hosts	Items 40	Triggers 29	Graphs 5	Dashboards 1	Discovery	Web	Zabbix	6.4-0
☐	Zabbix server health	Hosts 1	Items 61	Triggers 44	Graphs 11	Dashboards 2	Discovery 2	Web	Zabbix	6.4-0

Update proxy config to use benefits of incemental configuration update

Zabbix server configuration cache update frequency:

```
CacheUpdateFrequency=10
```

〰️For active proxy in /etc/zabbix/zabbix_proxy.conf

```
# ConfigFrequency=3600

ProxyConfigFrequency=10
```

〰️For passive proxy in /etc/zabbix/zabbix_server.conf

```
ProxyConfigFrequency=10
```

Upgrade Zabbix agents:

⁓ Active agent can now also do more frequent config updates

Instant refresh of active checks

Previously, Zabbix agent (in active mode) received from Zabbix server or Zabbix proxy a full copy of the configuration once every two minutes (default). By introducing incremental configuration sync, full configuration is no longer sent when there are no changes to host or global regular expressions, thus the default sync interval has been reduced to 5 seconds.

'RefreshActiveChecks' parameter supported in Zabbix agent configuration file default value is changed to 5 seconds (previously 120). This can make connections more frequent and increase network usage especially if encryption is used.

JSON protocol for active agent checks has been updated to include `config_revision` and `session` ID. For more information, see Passive and active agent checks.

User macros also affect the incremental configuration sync. It is advisable to use host macros instead of global macros because adding, updating or deleting global macros forces incremental configuration update for all hosts.

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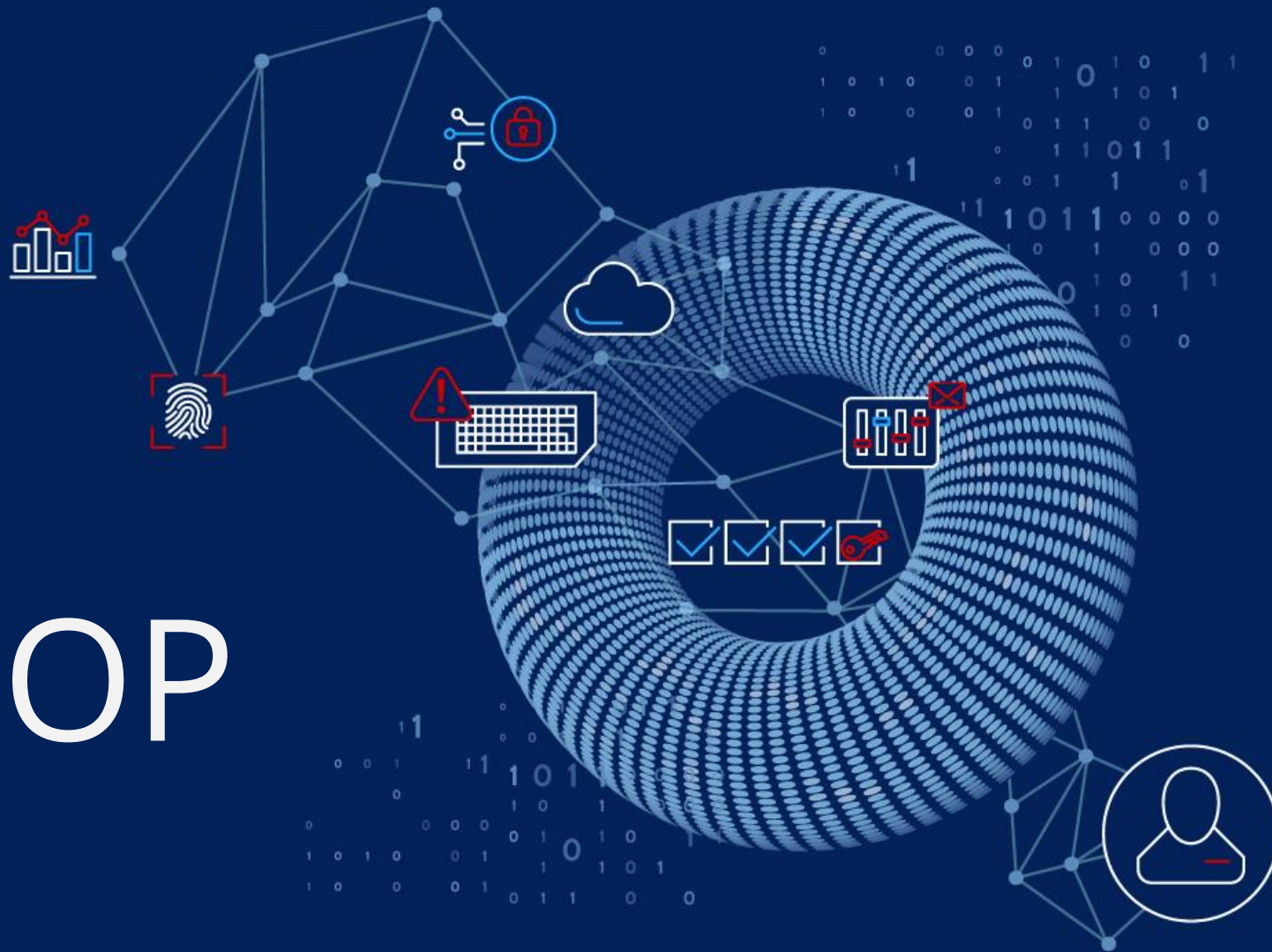
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Workshop: Upgrading your Zabbix instance – How to and best practices
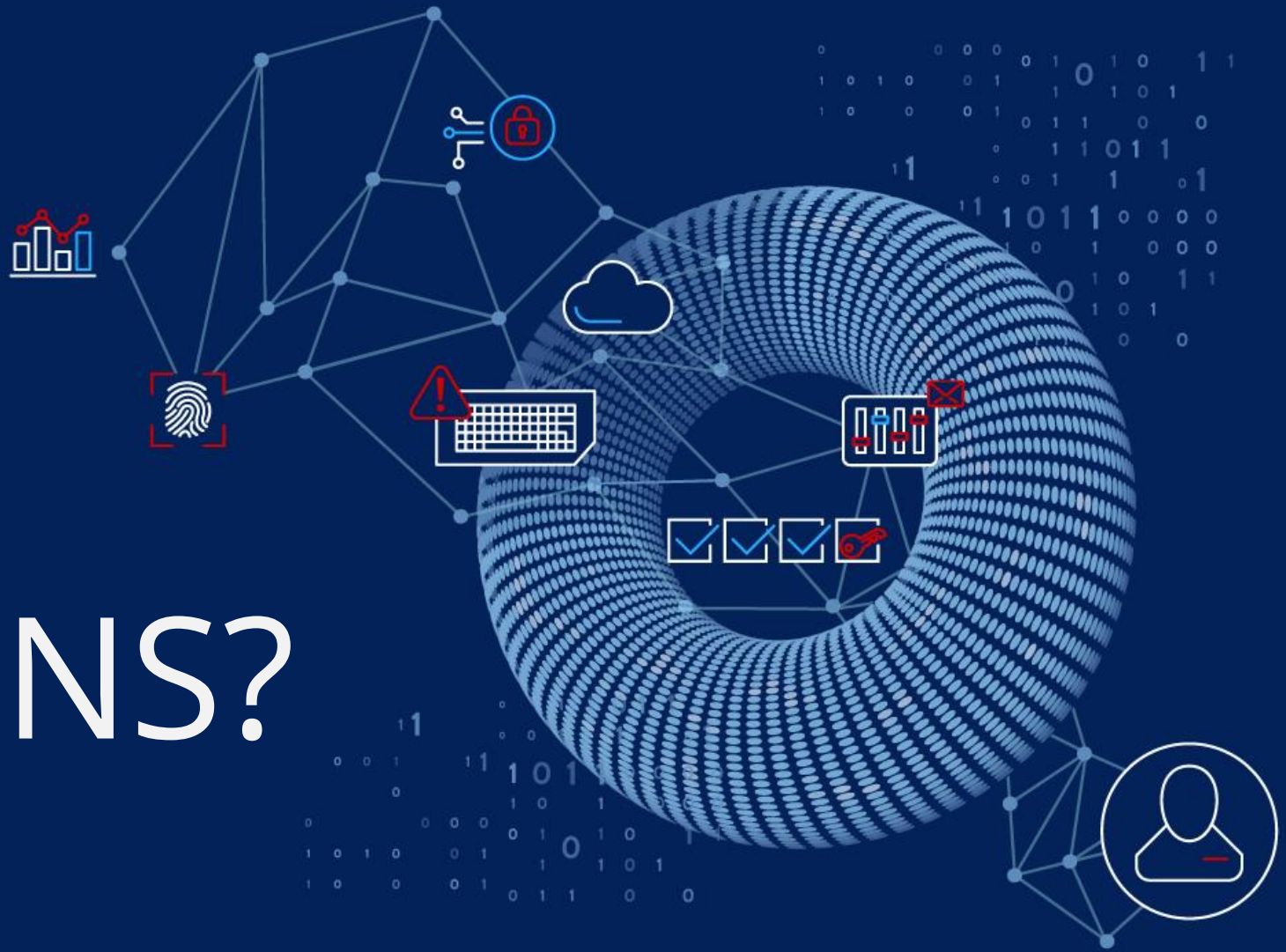
- Starts Saturday at 09:30 AM

- Every attendee will be provided with a cloud-based virtual machine

- You need a laptop with Internet connection

- Required software:
  - ✓ SSH client
  - ✓ Web browser

- We will use Zabbix 6.0 and upgrade it to 6.4: